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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Peter J. Melsa

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TEXAS INSTRUMENTS INCORPORATED

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EXAMINER

CHANG, EDITH M

ART UNIT

PAPER NUMBER

2637

DATE MAILED: 01/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/940,950	Applicant(s) MELSA, PETER J.	
	Examiner Edith M. Chang	Art Unit 2637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,7-16 and 19-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11-16 and 19 is/are allowed.
- 6) ☒ Claim(s) 1-4,7-8,20,21 and 25 is/are rejected.
- 7) ☒ Claim(s) 9,10,22-24 and 26 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments/Remarks

1. Applicant's arguments filed November 16, 2005 have been fully considered but they are not persuasive.

The drawing replacement sheets are not received, the claim 1 is rejected and the new claims do not put the application in allowable condition.

Drawings

2. Figures 1 and 2 should be designated by a legend such as --prior Art- because only that which is old is illustrated. See MPEP j 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claims 23 and 24 are objected to under 37 CFR 1.75 as being a substantial duplicate of claims 9 and claim 10 respectively. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a

slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

4. Claims 20 and 25-26 are objected to because of the following informalities:

Claim 20, line 8: "said first peak" should be "said first peak portion".

Claim 25, line 7: "widths of the plurality of shaping responses" should be "the variable width of the plurality of shaping responses"; lines 7-8: "widths of corresponding width of" should be "the corresponding width of".

Claim 26: line 5: "to corresponding width of each" should be "to the corresponding width of each".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Warburton et al.

Regarding **claims 1 & 25**, in FIG.2 & FIG.4, Warburton et al. discloses a method of processing an oversampled signal (FIG.1C or FIG.1D) with a plurality of peak portions from the preamp (20 of FIG.2) via the ADCBUS (50 of FIG.4) comprising:

peak detector 107 (FIG.4) *detecting* a plurality of peak portions comprising a first peak portion and a second portion of the signal from the preamp 20 (FIG.2) exceeding the 195 (threshold, column 19, lines 32-36); *determining* the widths (TSs for the first and the second peaks in FIG.8A) of the plurality of peak portions; *applying* and *varying* the variable width of one of shaping responses (FIG.8A, 196 one of the fast filter outputs) to the corresponding one of the peak portions (the first and the second) of the signal, wherein the width shaping response 196 is varied from TW to TM (FIG.8G).

Regarding **claim 2**, Warbudon et al. discloses the amplitude/peak of the first shaping response 196 in FIG.8A-8G (column 19, lines 25-27) changed based on the difference of the threshold 195 and a peak (as shown in FIG.8G).

Regarding **claims 3-4 & 7-8**, Warburton et al. discloses the width including a number of samples above the threshold (FIG.9A & FF FIG.9B) provided by the digital processor FIG.4.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCaslin et al. (US 5,668,794) in view of Melas et al. (US 5,293,369).

Regarding **claim 20**, McCaslin et al. in FIG.19 discloses a communication system with a transmit portion (the path of $R_{in}[k]$ to R_{out}) and a receive portion (the path of $S_{in}[k]$ to $R_{es}[k]$ to $S_{out}[k]$) wherein the $R_{in}[k]$, $S_{in}[k]$, $R_{es}[k]$ and $S_{out}[k]$ signals in the transmit and receive portion are oversampled signals converted via A/D converters (refer to FIG.1 as well). The communication system comprises

a Half-Duplex/Echo Canceller 408 (as the *buffer*) receiving the $R_{in}[k]$ on 400;
an Echo Suppressor 414 which includes an IIR Peak Detect 420 (as the *transmit peak detector*, in FIG.20, the far end & near end portions of the Echo Suppressor 414) coupled to the Half-Duplex/Echo Canceller 408 to determine the peak portion for the oversampled signal ($R_{in}[k]$ or $R_{es}[k]$, column 7, lines 40-54 & column 21, lines 53-55);

a Var Atten 410 (Variable Attenuator as the *modifying unit*, column 21, lines 56-57) receiving output from the Echo Suppressor 414 to attenuate (to shape) the oversampled signal; and

a Var Atten 412 (as the *shape canceller*) in the receive portion receiving output from the Echo Suppressor 414 to apply the FE ATTN or NE ATTN (FIG.20, as the *variable scale cancellation signal*) to the signal S_{in} subsequent the Var Atten 410 applying to.

However, McCaslin et al. does not explicitly specify the peak portion exceeding a predetermined threshold. Melas et al. teaches in FIG.5 a gated Infinite-Impulse-Response (IIR) digital filter operating as an envelope peak detector (column 8, lines 21-

24) with a predetermined threshold qualification ration T_r on 120 to provide a threshold level on 126 (column 8, lines 27-30 '369). As McCaslin et al.'s IIR filter 420 (FIG.20) in the Echo Suppressor 414 (FIG.19) described in equations 2 and 3 (column 7, lines 45-50 '794) wherein the equation 3 is a peak detector (column 7, lines 56 '794), it would have been obvious to one of ordinary skill in the art to have the gated IIR digital filter operating as a peak detector taught by Melas et al. implemented in the McCaslin et al.'s IIR Peak Detect 420 to provide an accurate output of the peak detect to remove high frequency components (column 2, lines 35-38 '369) for detecting qualified data signals (column 2, lines 43-46 '369).

Regarding **claim 21**, McCaslin et al. discloses the IIR filter 420 (FIG.20) in the Echo Suppressor 414 (FIG.19) described in equations 2 and 3 (column 7, lines 45-50 '794) being operable to estimate a width of the peak portion, wherein the K time index is operate to estimate the width.

Allowable Subject Matter

9. Claims 11-16 and 19 are allowed.
10. Claims 9-10, 22 and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
11. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record fails to teach or suggest, alone or in a combination,

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among other things, at least a system, an apparatus and its method for peak-to-average reduction of an oversampled signal as a whole, the combination of elements and features, which including a second modifying unit applying a variable width second shaping response to the second peak portion of the oversampled signal as recited in the claims.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edith M. Chang whose telephone number is 571-272-3041. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay K. Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Edith Chang
January 26, 2006


KHAI TRAN
PRIMARY EXAMINER